

CLAIMS

We claim:

1. An electric machine drive comprising:
a plurality of inverters for controlling respective electric machines;
a common control section for controlling the plurality of inverters.

2. The electric machine drive of claim 1, wherein the common control section further comprises only one microelectronic processor for controlling the plurality of inverters.

3. The electric machine drive of claim 2, further comprising only one gate driver circuit for controlling conduction of semiconductor switches in the plurality of inverters, said gate driver circuit being controlled by said one microelectronic processor.

4. The electric machine drive of claim 2, wherein the semiconductor switches are controlled to generate pulse width modulated signals to one or more electric machines.

5. The electric machine drive of claim 1 or 2, further comprising a common dc bus for supplying dc voltage to the plurality of inverters.

6. The electric machine drive of claim 5, wherein the common control section further comprises only a single voltage sensor for sensing voltage on the common dc bus.

7. The electric machine drive of claim 1, wherein the common control section is connected to a single set of phase current sensors for sensing current output from the plurality of inverters.

8. The electric machine drive of claim 1, wherein a first one of the plurality of inverters is a three-phase inverter for controlling a three-phase machine and a second one of the plurality of inverters is a two-phase inverter for controlling a two-phase machine.

9. The electric machine drive of claim 8, further comprising a third one of the plurality of inverters which is a two-phase inverter for controlling a two-phase machine.

10. The electric machine drive of claim 1, wherein a respective one of the electric machines is an ac synchronous machine.

11. The electric machine drive of claim 1, wherein a respective one of the electric machines is an ac induction machine.

12. The electric machine drive of claim 1, wherein a respective one of the electric machines is a permanent magnet machine.

13. The electric machine drive of claim 1, wherein a respective one of the electric machines is operated as a motor.

14. The electric machine drive of claim 13, wherein the respective one of the electric machines is also operated as a generator.

15. An electric machine drive comprising:
a plurality of inverters for controlling respective electric machines;
a common control section for controlling the plurality of inverters, wherein the common control section further comprises only one microelectronic processor for controlling the plurality of inverters.

16. The electric machine drive of claim 15, further comprising only one gate driver circuit for controlling conduction of semiconductor switches in the plurality of inverters, said gate driver circuit being controlled by said one microelectronic processor.

17. The electric machine drive of claim 15, wherein the microelectronic processor is a digital signal processor.

18. The electric machine drive of claim 15, wherein a first one of the plurality of inverters is a three-phase inverter for controlling a three-phase machine and a second one of the plurality of inverters is a two-phase inverter for controlling a two-phase machine.

19. The electric machine drive of claim 15, wherein the respective electric machines include a main traction machine and an accessory machine in a vehicle for transporting at least one person.